

Surgical site infection (SSI) prevention

Resource for Indicator Standards (RIS)
Health Analytics Branch, Ministry of Health and Long-Term Care

Indicator description

RIS indicator name

Surgical site infection (SSI) prevention

Other names for this indicator

- Surgical site infection prevention (SSI-prevention) - prophylactic antibiotic use prior to hip or knee surgery

Indicator description

Percentage of primary hip/knee joint replacement surgery patients who received antibiotics within the appropriate time* before skin incision.

*60 minutes for usual antibiotics and 120 minutes for vancomycin.

Accountability agreement(s) or ministry initiative(s) the indicator supports

- Patient Safety Public Reporting

Numerator

Data source

Self-Reporting Initiative (SRI) (Q1 2012-13 to present), and Web-Enabled Reporting System (WERS) (2008 to March 2012), Ontario Ministry of Health and Long-Term Care (MOHLTC)

Inclusion/exclusion criteria

Includes:

1. Primary total hip/knee joint replacements as coded in the Canadian Classification of Health Interventions (CCI) as:
 - a. Implantation of internal device, hip joint: 1.VA.53.^ (except 1.VA.53.LA-SL-N);
 - b. Implantation of internal device, pelvis: 1.SQ.53.^;
 - c. Implantation of internal device, knee joint: 1.VG.53.^ (except 1.VG.53.LA-SL-N);

d. Implantation of internal device, patella: 1.VP.53.^.

Excludes:

1. Patients <18 years of age on admission;
2. Patients who are not given antibiotics at any time from arrival in hospital through the first 24 hours post-operatively (e.g. patients on current antibiotic which may eliminate any prophylactic need);
3. Patients with an existing infection at the same site as the planned surgical procedure. This applies to surgeries that are classified under wound class III or IV (refer to Comments section for further details);
4. Patients undergoing revisions

Calculation

Steps:

1. Sum of the number of eligible hip or knee surgeries during which antibiotics were administered and fully infused within the appropriate time before skin incision.
2. Multiply by 1,000.
3. Measure from antibiotic start time to skin incision start time. If either time is missing, or the antibiotic administration is not fully infused, count as NOT obtaining prophylactic antibiotics on time.
4. If more than one surgical procedure is performed during a single index hospitalization, include data from the first surgical procedure only.

Denominator

Data source

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2. Implantation of internal device, patella: 1.VP.53.^.

Excludes:

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2. Patients who are not given antibiotics at any time from arrival in hospital through the first 24 hours post-operatively (e.g. patients on current antibiotic which may eliminate any prophylactic need);

3. Patients with an existing infection at the same site as the planned surgical procedure. This applies to surgeries that are classified under wound class III or IV (refer to Comments section for further details);
4. Patients undergoing revisions.

Calculation

Steps:

1. Sum of the number of eligible hip or knee surgeries for the reporting period.

Timing and geography

Timing/frequency of release

How often and when data are being released (e.g., be as specific as possible...data are released annually in mid-May)

Data are reported quarterly at the end of April, July, October and January and reflect the previous quarter's data.

Trending

Years available for trending

Data are available from Q4 2008/09.

Levels of comparability

Levels of geography for comparison

Data are available at provincial, LHIN and hospital levels.

Additional information

Limitations

Specific limitations

Data are self-reported by hospital.

Data is not available at the patient level. Therefore, the indicator cannot be broken down by socio-demographic characteristics.

Comments

Additional information regarding the calculation, interpretation, data source, etc.

National Nosocomial Infections Surveillance (NNIS) Surgical Wound Classification:

Class I Clean: An uninfected operative wound in which no inflammation is encountered and the respiratory, alimentary, genital, or uninfected urinary tract is not entered. In addition, clean wounds are primarily closed, and if necessary, drained with closed drainage. Operative incisional wounds that follow non-penetrating (blunt) trauma should be included in this category if they meet the criteria.

Class II/Clean-Contaminate: An operative wound in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in technique is encountered.

Class III/Contaminated Open, fresh, accidental wounds: In addition, operations with major breaks in sterile technique (e.g. open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute, non-purulent inflammation is encountered are included in this category.

Class IV/Dirty-Infected Old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection or perforated viscera: This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

Effective December 2012, patient safety indicator results, as well as other patient safety information, are available on.

References

Provide URLs of any key references (e.g., Diabetes in Canada, [http:// ...](#))

1. [Health Quality Ontario's Patient Safety Website](#)
2. Guideline for Prevention of SSI [National Nosocomial Infections Surveillance System (NNIS)].
3. Garner, J. S. and Simmons, B. P. Horan TC, Gaynes RP. Surveillance of nosocomial infections. In: Hospital Epidemiology and Infection Control, 3rd ed., Mayhall CG, editor. Philadelphia: Lippincott Williams & Wilkins, 2004:1659-1702.
4. [National Healthcare Safety Network](#)
5. [Safer Healthcare Now!](#)

Contact information

For more information about this indicator, please contact RIS@ontario.ca.

Date RIS document created (YYYY-MM-DD)

2012-12-11

Date last reviewed (YYYY-MM-DD)

2017-07-07